



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/019,086	04/09/2002	Paul Zientek	322-00066	3078

26753 7590 03/12/2004

ANDRUS, SCEALES, STARKE & SAWALL, LLP  
100 EAST WISCONSIN AVENUE, SUITE 1100  
MILWAUKEE, WI 53202

EXAMINER

ANGEBRANDT, MARTIN J

ART UNIT	PAPER NUMBER
----------	--------------

1756

DATE MAILED: 03/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/019,086

Applicant(s)

ZIENTEK, PAUL

Examiner

Martin J Angebrannt

Art Unit

1756

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02/19/02 & 04/09/02.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 and 22-34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 and 22-34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 April 2002 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 4.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

Art Unit: 1756

1. Claim 23 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

This claims recites ablation, while the claims upon which it depends recited polymerization .

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 19, 20, 22, 25-28 and 31 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Savant et al. '221.

Savant et al. '221 teach photochromic recording using azo dyes dispersed in polymers where holographic recording occurs. (4/55-66). This includes isomerization and crosslinking (4/67-5/7). Figure 3 evidenced the use of a reflective layer (lowest layer) which reflects the light

Art Unit: 1756

back after passing through the substrate and recording layer. Polarization recording is specifically discussed, but occurs as long as a polarized beam is used. (25/58-26/24).

5. Claims 19, 20 and 22 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Grime, G.W., "holographic Diffraction Gratings Recorded in Photoresist. ", in "Non-silver Photographic Processes".

Grime teaches the exposure of a photoresist using an Argon ion laser beam. This is a CW gas laser and the beam is polarized vertically due to the structure of the Argon ion laser. The resist is coated on a glass substrate and exposed to cause a solubility change, the resist is developed and coated with metal as shown in figure 5.

6. Claims 1-17 are rejected under 35 U.S.C. 102(b) as being fully anticipated by DE 29805481.

See the removal of portions of the tape using a laser taught with respect to figure 3.

**The claims are currently open to ablative modification of an intermediate to form the final diffractive article. The applicant could obviate this rejection by modifying the independent claims to indicate that the of the "patterned laser radiation" – bearing the pattern of the desired diffractive device- - . This preclude use of the laser to merely modify the diffractive article.**

**The examiner notes that the invention seems to differ in structure from most of the prior art as the hologram is formed in the plastic substrate (2), a polymeric layer (7) is applied before the reflective metal layer (12). Therefore the reflective layer is not directly in contact with the diffraction pattern. The examiner notes that the applicant should indicate that the opacifying layer (13) is formed on the side of the substrate opposite that**

Art Unit: 1756

**bearing the reflective layer (12). (see figure 1) The reflective layer will already block viewing from the other side. These are unclaimed features.**

The examiner notes that claim 13 specifically recites the reflective layer bearing the diffraction pattern.

7. Claims 1 and 3-6 are rejected under 35 U.S.C. 102(b) as being fully anticipated by JP 05-040936.

JP 05-040936 (Machine translation attached) describes in section [0051], the formation of an evaporated coating, the irradiation of this using a laser to remove a line of the evaporated material, and repeating the process to form a grating.

8. Claims 1,3-4 and 13 are rejected under 35 U.S.C. 102(b) as being fully anticipated by GB 2222696.

GB 2222696 teaches excimer laser ablation to directly form a grating in a plastic substrate and described the coating of the grating with a reflective layer. (page 2)

9. Claims 1-4 are rejected under 35 U.S.C. 102(b) as being fully anticipated by JP 10-113780.

JP 10-113780 teach the use of masked laser exposure to machine (ablate) grating patterns. See figure 6 and abstract)

10. Claims 1-4 are rejected under 35 U.S.C. 102(b) as being fully anticipated by JP 10-319221.

JP 10-319221 (machine translation attached) teach the use of masked laser exposure to machine (ablate) grating patterns. (See figures 1, 6,9 and corresponding text [0042, 0047,0050] and abstract)

11. Claims 1-4 and 13 are rejected under 35 U.S.C. 102(b) as being fully anticipated by JP 10-319221.

JP 10-319221 (machine translation attached) teach the use of masked laser exposure to machine (ablate) grating patterns. (See figures 5, 8, 6,9 and corresponding text [0031, 0035] and abstract)

12. Claims 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over **either** JP 06-51683, Takeuchi et al. '857 or JP62-111276, in view of JP 10-319221.

JP 06-51683 teaches holograms allowing only a partial view, where the holographic layer is a polymeric resin and is coated in areas with a material (3) having the same reflective index as the polymeric resins, thereby hiding the hologram in those areas. Additionally, these may be hiding layers (5 and 1 on the side opposite the holographic relief as shown in figure 8. The base materials may be a plastic [0013]. The metallization of the hologram is disclosed. [0021-0022]. This may be considered a translucent hologram.

Takeuchi et al. '857 teaches translucent/transparent holograms having the various structures shown in the figures. The holographic enhancing layer may be any of a variety of materials including thin metal films, polymers and various pigment compositions (col 6-9.)

JP 62-111276 teaches a pigmented polymeric layer having a hologram embossed therein and coated with various resin layers.

It would have been obvious to one skill in the art to modify the processes of **either** JP 06-51683, Takeuchi et al. '857 or JP62-111276 by using other known processes for forming

holograms, such as the direct laser ablation taught by JP 10-319221 with a reasonable expectation of forming a useful holographic object.

13. Claims 1-20 and 22-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over **either** JP 06-51683, Takeuchi et al. '857 or JP62-111276, in view of Grime, G.W., "holographic Diffraction Gratings Recorded in Photoresist. ", in "Non-silver Photographic Processes" and DE 29805481.

It would have been obvious to one skill in the art to modify the processes of **either** JP 06-51683, Takeuchi et al. '857 or JP62-111276 by using other known processes for forming holograms, such as the photoresist processing methods which are old and well known as established by Grime, G.W., "holographic Diffraction Gratings Recorded in Photoresist. ", in "Non-silver Photographic Processes" and to modify the process by laser ablation modification taught by DE 29805481 with a reasonable expectation of forming a useful holographic object.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin J Angebrannt whose telephone number is 571-272-1378. The examiner can normally be reached on Monday-Thursday and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 571-272-1385. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 1756

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Martin J. Angebranndt  
Primary Examiner  
Art Unit 1756

03/08/2004